UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,400	02/01/2002	James A. Merkle JR.	ECD-0004	1945

7590   09/07/2005

MILLS & ONELLO LLP
Suite 605
Eleven Beacon Street
Boston, MA 02108

EXAMINER
LAFORGIA, CHRISTIAN A

ART UNIT	PAPER NUMBER
2131	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/062,400	MERKLE ET AL.
	Examiner	Art Unit	
	Christian La Forgia	2131	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 October 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-110</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-110</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>08 October 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>10/12/04, 05/17/04</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-110 have been presented for examination.

Information Disclosure Statement

2.   The information disclosure statement filed 25 November 2002 fails to comply with 37

CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications,

or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent

application publications listed in a section separately from citations of other documents; (3) the

application number of the application in which the information disclosure statement is being

submitted on each page of the list; (4) a column that provides a blank space next to each

document to be considered, for the examiner's initials; and (5) a heading that clearly indicates

that the list is an information disclosure statement. The information disclosure statement has

been placed in the application file, but the information referred to therein has not been

considered.

3.   The information disclosure statements (IDS) submitted on 06 November 2003, 12 May

2004, 17 May 2004, and 12 October 2004 are in compliance with the provisions of 37 CFR 1.97.

Accordingly, the information disclosure statements have been considered by the examiner.

Priority

4.   Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

However, the provisional application upon which priority is claimed fails to provide adequate

support under 35 U.S.C. 112 for claims 1-110 of this application. The provisional application

60/313,952 fails to provide an enabling disclosure that would allow one of ordinary skill in the

art to replicate the invention without undue experimentation. The disclosure also fails to provide

a working example. See MPEP § 601 (the specification [of a provisional application] must

comply with the first paragraph of 35 U.S.C. 112), § 2164.01, § 2164.01(a), § 2164.01(b), and §

2164.02.

5.   Therefore, the priority claim to provisional application 60/313,952 has been denied.

6.   Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

However, the provisional application upon which priority is claimed fails to provide adequate

support under 35 U.S.C. 112 for claims 1-110 of this application. The provisional application

60/340,506 fails to provide an enabling disclosure that would allow one of ordinary skill in the

art to replicate the invention without undue experimentation. The disclosure also fails to provide

a working example. See MPEP § 601 (the specification [of a provisional application] must

comply with the first paragraph of 35 U.S.C. 112), § 2164.01, § 2164.01(a), § 2164.01(b), and §

2164.02.

7.   Therefore, the priority claim to provisional application 60/340,506 has been denied.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

9.   Claims 1, 2, 4-11, 13, 14, 16-19, 21-28, 30, 32-36, 40-46, 56, 57, 59-66, 68, 69, 71-74,

76-83, 85, 87-91, and 95-101 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S.

Patent 6,477,124 to Carson, hereinafter Carson.

10.   As per claims 1 and 56, Carson teaches authenticating a digital medium comprising:

monitoring a transfer rate of read data resulting from the reading of valid data stored on a

digital medium at a physical location (Figure 3 [block 140], column 6, lines 52-55; column 8,

lines 15-32, claims 5 & 7, i.e. data transferred at a first rate, and changing the data rate when

detecting a second data rate);

determining, from the monitored transfer rate, the presence of an anomaly region on the

digital medium corresponding to the physical location of the valid data on the digital medium

(Figures 2 [blocks 136, 138], 4 [blocks 184, 186, 188], column 2, lines 40-67, column 5, lines

27-67, column 7, lines 7-26, i.e. a second data rate); and

authenticating the digital medium based on a characteristic of the anomaly region (Figure

9 [blocks 276, 278, 280, 284], column 8, lines 15-32, i.e. data rate profile can be used for disc

authentication purposes).

11.   Regarding claims 2 and 57, Carson teaches wherein the digital medium comprises an

optical digital medium (column 1, lines 12-17).

12.   Regarding claims 4 and 59, Carson discloses wherein monitoring comprises monitoring

the transfer rate in real time, as the read data is read from the digital medium (column 4, lines 52-

64, column 9, lines 31-50).

13.   Regarding claims 5 and 60, Carson teaches wherein monitoring comprises monitoring the

transfer rate following reading of the read data from the digital medium (column 4, lines 52-64,

column 9, lines 31-50).

14.   Regarding claims 6 and 61, Carson discloses estimating the monitored data transfer rate

and determining the presence of the anomaly region based on the estimated data transfer rate

(column 4, lines 52-64, column 6, lines 45-67).

15.   Regarding claims 7 and 62, Carson teaches wherein the anomaly region causes a

modification in the transfer rate of the read data (column 5, lines 40-57, column 7, lines 27-57,

column 8, lines 16-32, i.e. change in data rate).

16.   With regards to claims 8 and 63, Carson discloses wherein the reading of the valid data is

performed by a reading device and wherein the modification in the transfer rate results from the

reading device automatically initiating multiple retries of reading the valid data due the presence

of the anomaly region (column 2, lines 48-58, i.e. first data rate and second data rate cannot be

accessed during same operation, but have to have separate operations).

17.   With regards to claims 9 and 64, Carson teaches wherein the reading of the valid data is

performed by a reading device and wherein the modification in the transfer rate results from the

reading device automatically slowing down the reading the valid data due the presence of the

anomaly region (Figure 9, column 5, lines 27-57, column 6, lines 45-55, column 9, lines 14-50).

18.   Regarding claims 10 and 65, Carson teaches wherein the anomaly region is located at a predetermined location on the medium (Figures 8 [blocks 256, 260, 262], 9 [blocks 274, 276], column 8, lines 16-58, column 9, lines 3-50).

19.   With regards to claim 11, 14, 66, and 69, Carson teaches wherein the predetermined location comprises an absolute address on the medium (Figure 9 [blocks 276, 278], column 9, lines 3-50).

20.   Regarding claims 13 and 68, Carson teaches wherein the anomaly region is at a location on the medium that is analytically determined as a result of the step of determining the presence of the anomaly region (Figure 3 [block 140], column 6, lines 52-55; column 8, lines 15-32, claims 5 & 7, i.e. detecting a change in the data rate).

21.   Regarding claims 16 and 71, Carson teaches wherein the anomaly region comprises a first anomaly region and further comprising:

        determining, from the monitored transfer rate, the presence of a second anomaly region on the digital medium corresponding to a second physical location of second valid data on the digital medium (Figure 3 [block 140], column 6, lines 52-55; column 8, lines 15-32, claims 5 & 7, i.e. detecting a change in the data rate); and

wherein a relative location of the second anomaly region is determined relative to the

location of first anomaly region (Figures 8 [blocks 256, 260, 262], 9 [blocks 274, 276], column

8, lines 16-58, column 9, lines 3-50).

22.   With regards claims 17 and 72, Carson teaches wherein authenticating is further based on

the determined relative location (column 8, lines 16-32).

23.   With regards to claims 18 and 73, Carson discloses wherein the second anomaly region is

located at a predetermined location on the medium (Figures 2 [blocks 136, 138], 4 [blocks 184,

186, 188], column 2, lines 40-67, column 5, lines 27-67, column 7, lines 7-47).

24.   With regards to claims 19 and 74, Carson teaches wherein the second anomaly region is

at a location on the medium that is analytically determined as a result of the step of determining

the presence of the second anomaly region (Figures 2 [blocks 136, 138], 4 [blocks 184, 186,

188], column 2, lines 40-67, column 5, lines 27-67, column 7, lines 7-47).

25.   Regarding claims 21 and 76, Carson teaches wherein the characteristic is the location of

the anomaly region in the read data, and wherein if the location of the anomaly region in the read

data matches the physical location of the anomaly region corresponding to the valid data, then

the digital medium is determined as authentic (Figure 9 [blocks 278, 284], column 8, lines 15-43,

column 9, lines 40-50).

26.   With regards to claims 22 and 77, Carson discloses wherein if the location of the anomaly

region in the read data does not match the physical location of the anomaly region corresponding

to the valid data, then the digital medium is determined as non-authentic (Figure 9 [blocks 278,

282], column 8, lines 15-43, column 9, lines 40-50).

27.   Regarding claims 23 and 78, Carson teaches controlling user access to the valid data on

the digital medium based on whether the medium is authentic (figure 9 [blocks 282, 284],

column 9, lines 40-50, i.e. grant/deny access).

28.   With regards to claims 24 and 79, Carson discloses wherein controlling comprises one of

allowing access, disallowing access, and limiting access to the valid data on the digital medium

(Figure 9 [blocks 282, 284], column 9, lines 40-50, i.e. grant/deny access).

29.   Regarding claims 25 and 80, Carson teaches wherein the determination of the presence of

the anomaly region results from a difficulty in the reading of the read data by a reading device

(Figures 2 [blocks 136, 138], 4 [blocks 184, 186, 188], 9, column 2, lines 40-67, column 5, lines

27-67, column 7, lines 7-26, column 9, lines 14-50).

30.   Regarding claims 26 and 81, Carson discloses wherein the anomaly region comprises a

physical alteration of the digital medium that results in the valid data corresponding to the

anomaly region being readable at a transfer rate that is different than a standard transfer rate of

valid data not corresponding to the anomaly region (column 4, lines 52-64, column 5, lines 27-

57).

31.   With regards to claims 27 and 82, Carson teaches wherein the physical alteration of the

digital medium comprises a mechanical alteration (column 6, lines 45-67, i.e. change the

rotational velocity of the disk).

32.   With regards to claims 28 and 83, Carson discloses wherein the physical alteration of the

digital medium comprises an optical alteration (column 4, lines 52-64, column 5, lines 27-57).

33.   Regarding claims 30 and 85, Carson teaches wherein the steps for performing the

authentication reside in software code that is previously stored on the digital medium, prior to

authentication (Figures 8 [blocks 262], 9 [block 274], column 9, lines 3-30).

34.   Regarding claims 32 and 87, Carson discloses wherein a known characteristic of the

anomaly region is previously stored, prior to authentication, and wherein authenticating the

digital medium based on a characteristic of the anomaly region comprises comparing the

characteristic to the known characteristic (Figures 8 [block 262], 9 [blocks 274, 278], column 9,

line 3-50).

35.   Regarding claims 33 and 88, Carson teaches wherein the presence of the anomaly region

is determined according to a modification in the transfer rate of the read data (Figures 2 [blocks

136, 138], 4 [blocks 184, 186, 188], column 2, lines 40-67, column 5, lines 27-67, column 7,

lines 7-26).

36.   With regards to claims 34 and 89, Carson discloses wherein the modification in the

transfer rate comprises a reduction in the transfer rate and wherein the anomaly region is

identified based on the extent of the reduction (column 7, lines 27-48).

37.   With regards to claims 35 and 90, Carson teaches wherein the modification in the transfer

rate comprises a reduction in the transfer rate to a resultant non-zero transfer rate (column 7,

lines 27-48).

38.   Concerning claims 36 and 91, Carson discloses wherein the resultant non-zero transfer

rate results in a determination that the anomaly region is a genuine anomaly region (column 7,

lines 27-48).

39.   With regards to claims 40 and 95, Carson teaches wherein the modification in the transfer

rate comprises an increase in the transfer rate, and wherein the characteristic is determined based

on the increase (column 5, lines 40-57).

40.   With regards to claims 41 and 96, Carson discloses wherein the modification in the

transfer rate comprises a response comprising an acceptable reduction in the data transfer rate

followed by a sudden increase in the transfer rate to an increased transfer rate that is greater than

a maximum transfer rate (column 4, line 52 to column 5, line 25).

41.   Concerning claims 42 and 97, Carson teaches wherein the response indicates that an

apparent anomaly region generated by an external source has been detected (column 8, lines 15-

32, i.e. detecting lack of data rate change).

42.   Concerning claims 43 and 98, Carson discloses filtering the apparent anomaly region

such that authenticating is not based on the apparent anomaly region (column 7, lines 39-47, i.e.

"decoy data").

43.   Regarding claims 44 and 99, Carson teaches wherein authenticating is based on a

characteristic of multiple anomaly regions (Figure 9 [blocks 276, 278], column 9, lines 31-50).

44.   Regarding claims 45 and 100, Carson discloses wherein authenticating is based on

multiple characteristics of the anomaly region (Figure 9 [blocks 276, 278], column 9, lines 31-

50).

45.   Regarding claims 46 and 101, Carson teaches wherein the anomaly characteristic

comprises anomaly severity (column 9, lines 3-50).

Claim Rejections - 35 USC § 103

46.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

47.   Claims 3, 29, 58, and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Carson.

48.   Regarding claims 3 and 58, Carson does not disclose wherein the digital medium

comprises a magnetic digital medium.

49.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to record the digital medium on a magnetic digital medium, since Carson states at

column 9, lines 51-67 that such a modification could be used for forensic tracking, thereby

providing a means for preventing and tracking the pirating of data.

50.   With regards to claims 29 and 84, Carson does not teach wherein the physical alteration

of the digital medium comprises a magnetic alteration.

51.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to magnetically alter the digital medium, since Carson states at column 9, lines 51-67

that such a modification could be used for forensic tracking, thereby providing a means for

preventing and tracking the pirating of data.

52.   Claims 12, 15, 20, 47, 67, 70, 75, and 102 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Carson in view of U.S. Patent No. 5,708,649 to Kamoto et al., hereinafter

Kamoto.

53.   Concerning claims 12, 15, 20, 47, 67, 70, 75, and 102, Carson does not teach wherein the

absolute address represents an encoded data value.

54.   Kamoto discloses wherein the absolute address represents an encoded data value (Figure

9, column 6, lines 16-64).

55.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made for the absolute address to represent an encoded data value, since Kamoto states at

column 6, lines 16-34 that such a modification would enable reproduction of a disk by

scrambling and correcting the data using the encoding process.

56.   Claims 31 and 86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carson

in view of U.S. Patent No. 6,775,227 to Watanabe et al., hereinafter Watanabe.

57.   Regarding claims 31 and 86, Carson does not disclose wherein the steps for performing

the authentication reside in firmware that is stored in a media drive performing the authentication

or in a computing device controlling the media drive, or stored in firmware controlling the media

drive, or stored remotely and provided to the media drive by a network connection.

58.   Watanabe teaches wherein the steps for performing the authentication reside in firmware

that is stored in a media drive performing the authentication or in a computing device controlling

the media drive, or stored in firmware controlling the media drive, or stored remotely and

provided to the media drive by a network connection (column 4, lines 28-34).

59.   It would have been obvious to one of ordinary skill in the art at the time the invention
was made to store authentication information in the reading/reproduction apparatus, since
Watanabe states at column 4, lines 35-39 that such a modification would prohibit the use of disks
that where reproduced through unauthorized copying, thereby preventing the pirating of
software.

60.   Claims 37-39 and 92-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over
Carson in view of U.S. Patent Application Publication No. 2002/0142248 to Dubois et al.,
hereinafter Dubois.

61.   With regards to claims 37 and 92, Carson does not disclose wherein the modification in
the transfer rate comprises a reduction in the transfer rate to a resultant zero transfer rate.

62.   Dubois teaches wherein the modification in the transfer rate comprises a reduction in the
transfer rate to a resultant zero transfer rate (paragraph [0076], i.e. temporarily unreadable).

63.   It would have been obvious to one of ordinary skill in the art at the time the invention
was made to have the transfer rate drop to zero for authentication purposes, since Dubois states
at paragraph [0077] that such a modification can be used to serve as a verification of the
authenticity of the disk.

64.   Concerning claims 38 and 93, Carson teaches wherein the resultant zero transfer rate
results in a determination that the anomaly region is a false anomaly region (column 7, lines 27-
47, i.e. "decoy data").

65.   Concerning claims 39 and 94, Carson teaches wherein the false anomaly region indicates

that the digital medium is non-authentic (column 7, lines 27-47, column 8, lines 15-32).

66.   Claims 48-55 and 103-110 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Carson in view of U.S. Patent 5,799,145 to Imai et al., hereinafter Imai.

67.   Regarding claims 48 and 103, Carson does not disclose wherein the digital medium is

read by a reading device, and wherein monitoring further comprises recording prior settings of

the reading device prior to reading; and restoring the prior settings of the reading device

following authenticating.

68.   Imai teaches wherein the digital medium is read by a reading device, and wherein

monitoring further comprises recording prior settings of the reading device prior to reading; and

restoring the prior settings of the reading device following authenticating (column 1, lines 22-

38).

69.   It would have been obvious to one of ordinary skill in the art at the time the invention

was made to reset the settings after reading from the device, since Imai discloses at column 1,

lines 22-38 that such a modification would restore the authentication settings so that the data

could not be accessed until the authentication process was carried out again, thereby protecting

the data stored on the disk.

70.   With regards to claims 49 and 104, Imai teaches wherein, following recording, the

reading device is reset (column 1, lines 22-37).

71.   Concerning claims 50 and 105, Imai discloses wherein following recording, a cache on the reading device is reset (column 1, lines 22-37).

72.   With regards to claims 51 and 106, Imai discloses selecting a data block size for the reading device (Figure 1 [blocks 11-13], 3, column 4, lines 5-26).

73.   With regards to claims 52 and 107, Carson and Imai do not teach disabling excessive retry attempts by the reading device.

74.   It would have been obvious to one of ordinary skill in the art at the time the invention was made to disable excessive retry attempts by the reading device, since one of ordinary skill in the art clearly recognizes the need to prohibit what are known as brute force attacks, when would-be malicious users repeatedly try to break into a device by retrying and retrying.

75.   With regards to claims 53 and 108, Carson discloses reading locations of the digital medium known to be free of anomaly regions in order to archive a maximum transfer note (column 4, lines 52-64, column 6, lines 27-67).

76.   With regards to claims 54 and 109, Carson discloses ceasing reading when an anomaly location has been encountered (Figure 9 [block 282], column 9, lines 40-50).

77.   With regards to claims 55 and 110, Carson teaches storing the read data for statistical analysis (Figures 4-7, 9 [blocks 274, 276], column 8, lines 16-43).

Conclusion

78.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

The following patents are cited to further show the state of the art with respect to disk

authentication, such as:

United States Patent No. 5,463,604 to Naito, which is cited to show dividing information

record surface into a plurality of record zones and recording information at a data rate which

differs for every record zone.

United States Patent Application Publication No. 2003/0072447 to Saliahov, which is

cited to show measuring the sectors of a disk for authentication purposes.

United States Patent No. 6,366,969 to Hanson, which is cited to show measuring the data

transfer rates during read and write operation from and to a hard drive.

United States Patent Application Publication No. 2005/0050343 to Selinfreund et al.,

which is cited to show controlling access to a storage medium.

United States Patent No. 4,800,548 to Koishi et al., which is cited to show record

information on a disk to reproduce the information to an optical disk.

United States Patent No. 5,959,954 to Yamamuro, which is cited to show a recording

device that is capable of handling variable revolution rates and data clock frequencies.

79.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Christian La Forgia whose telephone number is (571) 272-3792.

The examiner can normally be reached on Monday thru Thursday 7-5.

80.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

81.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christian LaForgia
Patent Examiner
Art Unit 2131
clf

AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100